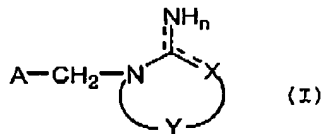


U.S. Patent No. 09/933,717

In The Claims:

Please amend the claims as follows;

1. (Currently Amended) An activator ~~Activators~~ for  $\alpha 4\beta 2$  nicotinic acetylcholine receptors containing, as active ingredient, a heterocyclic compound ~~compounds~~ represented by the following formula (I):



wherein:

~~A is optionally substituted aryl group; or optionally substituted heterocyclic group~~ a phenyl group which is optionally substituted one or more times by C<sub>1</sub>-C<sub>4</sub> alkyl group, halogen atom, nitro group or cyano group; or a heterocyclic group selected from the group consisting of thiophene, furan, pyran, pyrrole, pyrazole, pyridine, pyrimidine, pyrazine, pyridazine, imidazole, oxazole, isoxazole, thiazole, isothiazole, quinoline, isoquinoline, azaindole and tetrahydropyrimidine group, which is optionally substituted one or more times by C<sub>1</sub>-C<sub>4</sub> alkyl group, or halogen atom;

~~X is oxygen atom; sulfur atom; carbon atom; or nitrogen atom;~~

the dotted line shows either the presence or absence of a bond;

~~n is integer of 1 or 2; and~~

~~Y is,~~

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~~(1) in the case of X is oxygen atom, group Y-X is CH<sub>2</sub>-CH<sub>2</sub>-O or CH<sub>2</sub>-CH<sub>2</sub>-O-~~

~~(2) in the case of X is sulfur atom, group Y-X is CH(R<sup>1</sup>)-CH<sub>2</sub>-S-, C(R<sup>2</sup>)-C(R<sup>3</sup>)-S- or CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-S- (in which, R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup> are hydrogen atom; C<sub>1</sub>-C<sub>4</sub>-alkyl group; or optionally substituted phenyl group);~~

~~(3) in the case of X is carbon atom, group Y-X is CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-, CH-C(R<sup>4</sup>)-C(R<sup>5</sup>)-C(R<sup>6</sup>)-, CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-, or N-C(R<sup>7</sup>)-CH=CH- (in which, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup> and R<sup>7</sup> are hydrogen atom; C<sub>1</sub>-C<sub>4</sub>-alkyl group; optionally substituted phenyl group; halogen atom; or nitro group); and,~~

~~(4) in the case of X is nitrogen atom, the group -Y-X- is CH<sub>2</sub>-CH<sub>2</sub>-NH-, CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-NH-, -CH=C(R<sup>8</sup>)-N= or -CH=C(R<sup>9</sup>)-CH=N- (in which, R<sup>8</sup> and R<sup>9</sup> are hydrogen atom; or optionally substituted phenyl group which is optionally substituted one or more times by C<sub>1</sub>-C<sub>4</sub> alkyl group, halogen atom, nitro group, or cyano group);~~

~~or pharmaceutically acceptable salts thereof as active ingredient.~~

2. (Currently Amended) ~~The activators~~ A composition comprising an activator for  $\alpha 4\beta 2$  nicotinic acetylcholine receptors according to claim 1, wherein said activator is an agonist or modulator ~~activators are agonists or modulators~~ at  $\alpha 4\beta 2$  nicotinic acetylcholine receptors.

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3. (Currently Amended) A therapeutic agent for ~~preventing or~~ treating cerebral circulation diseases comprising an effective amount of the activator for  $\alpha 4\beta 2$  nicotinic acetylcholine receptors claimed in claim 1 or 2.
4. (Currently Amended) A therapeutic agent for ~~preventing or~~ treating neurodegenerative disease, dementia, motor ataxia, and neuropathy and mental disease comprising an effective amount of the activator for  $\alpha 4\beta 2$  nicotinic acetylcholine receptors claimed in claim 1 or 2.
5. (Original) The therapeutic agent according to claim 4, wherein said neurodegenerative disease is Alzheimer's disease or Parkinson's disease, said dementia is cerebrovascular dementia, said motor ataxia is Tourette's syndrome, and said neuropathy and mental disease is neurosis during chronic cerebral infarction stage, anxiety or schizophrenia.
6. (Currently Amended) A medicament for improving the cerebral metabolism, neurotransmission functional disorder and memory disorder, for protecting brain, or having analgesic effect, which comprises an effective amount of the activator for  $\alpha 4\beta 2$  nicotinic acetylcholine receptors claimed in claim 1 or 2.

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7. (Currently Amended) A medicament for ~~preventing or~~ treating inflammatory intestinal diseases comprising an effective amount of the activator for  $\alpha 4\beta 2$  nicotinic acetylcholine receptors claimed in claim 1 or 2.

8. (Currently Amended) A method of activating  $\alpha 4\beta 2$  nicotinic acetylcholine receptors comprising administering an effective amount of  $\alpha 4\beta 2$  nicotinic acetylcholine ~~activating effective amount of a~~ compound as claimed in claim 1 or pharmaceutically acceptable salts thereof.

9. (Cancelled)

10. (Currently Amended) An activator ~~Activators for~~  $\alpha 4\beta 2$  nicotinic acetylcholine receptors containing one or more compounds ~~compound~~ claimed in ~~claim 9~~ claim 18 or pharmaceutically acceptable salts thereof as active ingredient.

11. (Currently Amended) ~~The activators~~ A composition comprising an activator for  $\alpha 4\beta 2$  nicotinic acetylcholine receptors according to claim 10, wherein said activator is an agonist or modulator ~~activators are agonists or modulators~~ at  $\alpha 4\beta 2$  nicotinic acetylcholine receptors.

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12. (Currently Amended) A composition therapeutic agent for ~~preventing or~~ treating cerebral circulation diseases comprising an effective amount of the activator for  $\alpha 4\beta 2$  nicotinic acetylcholine receptors claimed in claim 10 or 11.

13. (Currently Amended) A composition therapeutic agent for ~~preventing or~~ treating neurodegenerative disease, dementia, motor ataxia, and neuropathy and mental disease comprising an effective amount of the activator for  $\alpha 4\beta 2$  nicotinic acetylcholine receptors claimed in claim 10 or 11.

14. (Currently Amended) The composition therapeutic agent according to claim 13, wherein said neurodegenerative disease is Alzheimer's disease or Parkinson's disease, said dementia is cerebrovascular dementia, said motor ataxia is Tourette's syndrome, and said neuropathy and mental disease is neurosis during chronic cerebral infarction stage, anxiety or schizophrenia.

15. (Currently Amended) A medicament for improving the cerebral metabolism, neurotransmission functional disorder and memory disorder, for protecting the brain, or having analgesic effect, ~~which comprises~~ comprising an effective amount of the activator for  $\alpha 4\beta 2$  nicotinic acetylcholine receptors claimed in claim 10 or 11.

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16. (Currently Amended) A medicament for ~~preventing or treating~~ inflammatory intestinal diseases comprising an effective amount of the activator for  $\alpha 4\beta 2$  nicotinic acetylcholine receptors claimed in claim 10 or 11.

17. (Currently Amended) A method of activating  $\alpha 4\beta 2$  nicotinic acetylcholine receptors comprising administering an effective amount of  $\alpha 4\beta 2$  nicotinic acetylcholine ~~activating effective amount of a~~ compound as claimed in claim 18 ~~claim 9~~ or pharmaceutically acceptable salts thereof.

18. (New) A compound selected from the group consisting of:

- 1-(6-chloro-3-pyridyl) methyl-2-imino-5-phenyl-1,2-dihydropyrimidine;
- 2-amino-1-(2-chloro-5-thiazolyl) methylimidazole;
- 2-amino-1-(6-chloro-3-pyridyl)methyl-4, 5-dimethylimidazole;
- 2-amino-1-(5-pyrimidyl)methylimidazole;
- 2-amino-1-(6-chloro-3-pyridyl)methyl-4-methylimidazole;
- 2-amino-1-(5,6 -dichloro-3-pyridyl)methylimidazole;
- 2-amino-1-(3-pyridyl)methylimidazole;
- 2-amino-1-(6-methyl-3-pyridyl)methylimidazole;
- 2-amino-1-(4-chlorobenzyl)imidazole; and
- 2-amino-1-(7-aza-3-indolyl)methylimidazole;

or a pharmaceutically acceptable salt thereof.